
# Operations & P5 Preparation

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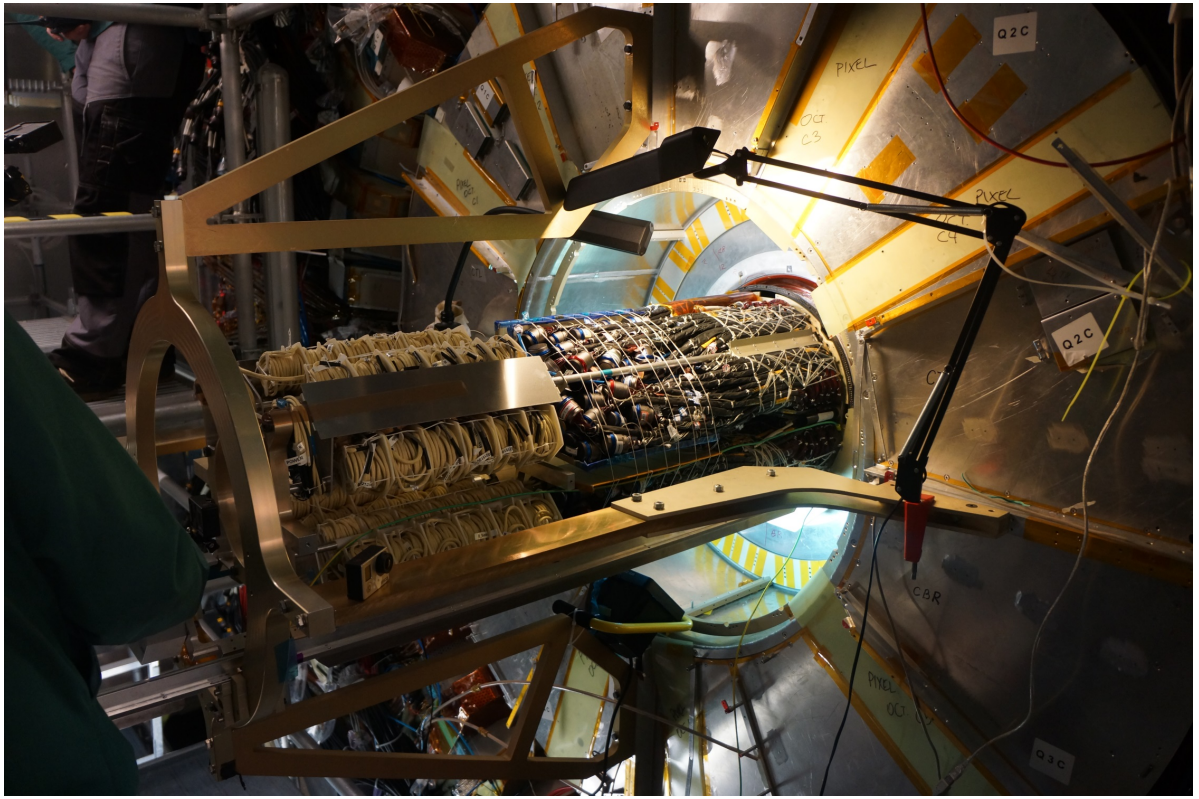
# Point 1 News

- Maintenance and Consolidation activities on schedule.
  - Pixel detector has been reinserted into ATLAS (Dec. 9)
  - completing the pixel refurbishment and nSQP installation



# News

- IBL module production complete
  - 12/14 staves built and tested.
  - Corrosion on wire bonds observed
    - Likely due to condensation during thermal cycling (that did not take place in a climate chamber). 3 of the staves badly corroded. Rest 9 being reworked. Additional staves being built (have material to build up to 20 staves).
    - Halogen compounds like Cl and F found (but not on glue). Investigation ongoing.
  - Still on schedule:
    - Spare staves would arrive in March-April in time for integration.

# US ATLAS Operations News

- FY13 = $27M (DOE) + $9M (NSF)
- FY14 = $24.5M (DOE) + $9M (NSF)
  - We have been verbally told that we could get an additional 0.5M in FY14 and perhaps more if the President's budget passes.
    - Need to follow up on this.
  - We made significant cuts in FY14, including
    - T1 equipment (0.5M) and T2 (SLAC) Equipment (300k).
    - Restored for FY15 in our long range planning.
    - Long term additional cuts needed to stay within guidance.
      - Need to accommodate Phase 1 installation and commissioning (FY18).

# Reviews

- Annual Director's review at BNL:
  - Jan. 23 – Jan. 24, 2014
- Annual DOE/NSF review at Columbia University
  - March 17 – March 18, 2014.

# P5

- The BNL Session of the P5 meeting focused on:
  - LHC Upgrades, ILC, Muon Collider, Proton Driver, Accelerator based rare processes, Accelerator R&D, Detector R&D, HE vision.
- Details of the BNL session can be found at:
  - **http://www.bnl.gov/p5workshop2013/**
- Sessions of Interest to us:
  - Sunday morning (09:00 – 12:30): LHC Upgrade
  - Monday late PM: TownHall Meeting
    - (Open mic inviting comments from the community)

# Request for Input

- The P5 committee had requested further input on the U.S. LHC upgrade program through a series of presentations during the BNL open session.
  - The Physics Case for the HL-LHC.
  - The scope of the upgrade program and the U.S. interests.
  - The long term vision of the U.S. participation in the LHC program.
  - The U.S. contributions to the Accelerator upgrades.
  - For each upgrade component:
    - Crisp summary of the physics case specific to the component.
    - U.S. scope and how it benefits the U.S.
    - Timeline, Cost estimates and Effort.
    - Priority of the specific upgrade component along with any options for reduced scope.

# P5 Open Session Talks

- After discussion with our US CMS counterparts, we organized the following set of presentations:
  - Introduction to HL-LHC: B. Heinemann/J. Incandela (25)
  - LHC Machine Upgrades: G. Apollinari (20)
  - CMS/US CMS detector upgrade plans: J. Spalding (25)
  - ATLAS/US ATLAS detector upgrade plans: H. Evans (25)
  - More details at:
    - https://indico.bnl.gov/conferenceDisplay.py?confId=680

# Preparations

- In addition to the talks, we put together a document highlighting the US interest in the Phase II upgrade, together with a first cost estimate.
  - Document attached to Indico page.
  - Mike Tuts is the primary editor of this document, with input from many of us including Abe Seiden and the Upgrade R&D L2 managers.
  - This document was submitted to the P5 committee
  - We also have a supporting letter from ATLAS management – highlighting the value of the US efforts.
    - The letter is also attached to the Upgrade document.
- We have submitted the document and the letter from ATLAS management to the P5 committee.

# Cost Estimate

| System | ATLAS Core (FY12 MCHF) | US Core (AYM$) | US Total (AYM$) |
|---|---|---|---|
| Tracker | 157.5 | 20.9 | 42.8 |
| LAr | 47.2 | 11.9 | 42.5 |
| TileCal | 10.0 | 3.4 | 12.0 |
| Muons | 20.1 | 1.6 | 3.5 |
| TDAQ | 24.2 | 7.3 | 51.9 |
| Common Cost | 16.3 | 4.0 | 4.0 |
| *Base Project Cost* | *275.3* | *49.1* | *156.7* |
| Proj. Mgmt | | | 10.0 |
| Contingency (50%) | | 24.6 | 83.4 |
| **TOTAL COST** | | **73.7** | **250.1** |
| **Physicist FTE/year** | | | **50** |

**US ATLAS Total : Includes Labor, estimated by using a "scale" derived from either the original construction or Phase I upgrade.**

# At the P5 meeting

- The LHC upgrade talks were well received during the open session.
- We received three questions, dealing with:
  - Scope and prioritization
  - International commitments
  - Physicist effort
- These questions were answered in a closed session.
  - They want more details justifying the scale of physicist participation in LHC: Why 400 FTE are necessary?
  - We are preparing additional metrics to justify the scale.